THE

AGRICULTURAL MUSEUM:

OMNIS FERET OMNIA TELLUS. VIRG.

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The following Article ought to have occupied a place in an early Number of the Museum.—It was selected for that purpose, but afterwards mislaid and not noticed again till very recently. The Editor hopes to have it in his power shortly to give an account of the present state of the Establishments to which it alludes. With this view it is now inserted.

DOMESTIC MANUFACTURES.

THE Committee of Enquiry, in conformity to a resolution of the 7th ultimo, beg leave to report to the "Maryland Association for the Encouragement of Domestic Manufactures," as follows—viz.

Various establishments in the neighbourhood of Baltimore, for spinning and weaving of cotton, are making a rapid progress: The Union Manufactory, on Patapsco, with 1,000,000 dollars capital; the buildings now nearly completed, will contain from six to eight thousand spindles, eight hundred of which are in operation; the machinery pronounced, by good judges, to be equal for elegance and ingenuity, to any in the world. The company manufacture all their own machinery, for which purpose they have the most perfect apparatus, impelled by water, in full operation;—their looms are also in considerable forwardness.

The establishment of E. & J. Levering, & Co. on Gwynn's Falls, with 200,000 dolls. capital, to contain five thousand spindles, will be in operation in August next. This company intends, and is fully prepared, to go extensively into the corduroy, thickset, and velveteen wares; and workmen of extensive experience are procured for these purposes.

The "Washington Cotton Company" on Jones' Falls, with eight thousand dollars capital, containing one thousand spindles, now spins two thousand hanks of yarn per week, from No. 8 to 30. There are seven looms at work on cords, twills, stripes, chambrays, ginghams, sheetings and shirtings; they have also a dying house in operation.

The calico printing and dying factory of Messrs Lannay's on Gwynns' Falls, enriches our market with large quantities of goods, and the neatness of execution and durability of the colours, must ensure success to the institution. Nor can your committee pass over in silence the Hat and Bonnet Manufactory of Mr. Cartee of this city, as these elegant fabricks for neatness of execution, as well as true taste, are esteemed superior to any others ever made in this or any other country.

In addition to the large establishments we have mentioned, there are in and about Baltimore upwards of fifty looms, owned by individuals, and principally employed on summer cotton ware; and as soon as our large spinning factories get into full operation, there is no doubt but the number will rapidly increase.

The woolen manufactory of Rogers & Co on Jones's Falls, which sent a large quantity of cloths to our market last winter, will probably send double that quantity next season, and of a much superior quality, as the establishment is greatly enlarged and improved.

That at Elkton will also furnish a large supply for the fall market; a considerable portion of what was there manufactured the previous year, not having been finished in time for the last winter.

The wearing articles of domestic manufacture, collected from various parts of the union, now for sale in the Domestic Warehouse and other stores in Baltimore, are the following, viz.

Flaxen and tow linen, cotton sheeting and shirting, printed calicoes, shawls and handkerchiefs, cotton and linsey stripes, chambrays, Virginia cloth, bed-ticking and coverlids, cotton yarn, and thread of various kinds

and colours; sewing silk and cotton, coatings, coarse and fine cloths, cassimeres and casinets, morocco hats and caps, buckskin breeches, pantaloons and gloves, hosiery, yarn and shoe thread, cotton and thread hose, ladies hats and bonnets, &c.

Excluding those manufactures that are so firmly and extensively established throughout the union, as to render importation unnecessary, your committee would beg leave to notice a few others, either in the neighbourhood of Baltimore, or in which some of the citizens of Baltimore are concerned, which have arrived at considerable perfection.

The paper mills of Conrad, Lucas & Co. on Patapsco, with forty thousand dollars capital, make twelve thousand reams per annum. Those of Levering & Co. on Gwynn's Falls, with a capital of seventy thousand dollars, make forty thousand reams per annum. The gunpowder mills of Lorman & Co. on Gwynn's Falls, with eighty thousand dollars capital, make thirty quarter casks per day; those of N. Levering & Co. on Jones's Falls, with eighty thousand dollars capital, make thirty two qr. casks per day. The spade, shovel and hoe manufactory of Reed & Davis, on Gunpowder Falls, with eight thousand one hundred dollars capital, made last year four dozen of spades and of shovels per day, and is now said to be producing double that quantity—these spades and shovels are certainly far superior to any ever imported into the country. The sliting iron, rolling, and nail factory of Elliott & Co. on Patapsco, with fifty thousand dollars capital. The steel foundery of Mr. M'Dermet, Bedford county, Penn. said to produce steel equal in quality to the best Crawley, and sufficient to supply the whole United States. The Glass Works of Mr. Frieze capital forty thousand dollars, producing three thousand four hundred boxes of glass annually, each containing one hundred square feet. The Type Foundery of S. Sower & Co. with ten thousand dollars capital, making from twelve to fourteen thousand lb. of type annually. The Paper Hanging Manufactory of Thomas & Cald-

cleugh, is fully equal to the demand of our market; this with others in Philadelphia, can supply the whole United States with paper hangings, superior to any imported, and at a lower price.

The statements here given, have, with one or two exceptions, been received from the proprietors, and consequently their accuracy may be relied on. They exhibit a flattering view, even of Maryland, which is far behind several of her sister states, in respect to manufactures.—They will also shew by comparison, that the report of the secretary of the Treasury must fall far short of the real progress made, and of the capital embarked, in domestic manufactures throughout the union. Superfine cloths are still far short of answering the demand; but from the numbers of Merinoes now in the country, and the rapidity with which they will undoubtedly be propagated, there are pleasing prospects even in this quarter — There is perhaps no one article more wanted at present in our market than summer waistcoat patterns. An extensive establishment for the bleaching and finishing of country linens in the European style, is still a *desideratum*; as it would greatly enhance the utility, the sales, and the value of those linens, now brought to our market in such vast quantities.

Upon the whole, the laudable design of the Maryland Association is likely to be realised beyond the most sanguine expectations; perseverance being all that is necessary, to accomplish the end.

We frequently hear the foes of domestic manufactures complain of the high prices at which those articles are sold. But they do not consider that the greater durability of home made goods will, in general, more than counter-balance the difference of price between these and the flimsey wares which now arrive from foreign countries. Besides, the objection, if true, is a very short sighted one; for the higher the price, the greater the profits; and the greater the profits, the more will be induced to embark in the business; hence *rivalship will soon reduce the prices to their proper standard*, and at the same time accom-

plish the great object in view, the establishment of manufactures to an extent commensurate with our home consumption.

Members of the Maryland Association,—friends to domestic manufactures, and to your country! *Persevere* in the noble cause in which you have embarked. As you value the rights and privileges of freemen; as you value your posterity, to whom it is your duty to hand down the blessings of independence, persevere, and success will crown your endeavours.

Published by order of the Association,

JOHN D. CRAIG, Sec

Baltimore, June 2, 1810.

FOSSIL MANURES.

West Jersey appears to be a tract of country, rescued by the hand of nature, from the dominion of the seas. At what era this great change occurred, is unknown; but the whole region appears to have been, one day, an extensive marsh, through which the tide flowed from the ocean, and to have been afterwards covered by an immense body of sand and earth, washed down from the upper country. This is evident from the marine productions, every where found at the level of a few feet above the present high water mark; in some places, perhaps a little higher or lower. These productions are shells, and other animal and vegetable remains, and a stratum of sediment, or *marine marsh sand*, about fifteen feet through, at the bottom of which, a layer of oyster shells is generally found, sometimes even a solid bank.

It should seem as if some mighty convulsion of nature had at some period of time, burst the mounds of a vast lake up the Delaware, (where geological appearances confirm the idea) and at the same time, heaved up the earth from beneath. By these means, the maritime region of West Jersey, and perhaps of other parts in its

whole extent, has at once been covered, many feet deep with the hills and mountains washed down from above. This convulsion may have been sustained at the era of the universal deluge, the supposition more generally received; or, it may have been the effect of an earthquake, or of both those potent causes. At least, the astonishing changes that have evidently taken place in our country, are a confirmation of the credibility of the Mosaic history; and may serve as an instance, in which the contemplation of nature leads the reflecting mind to an assent to the sublime facts, recorded in divine revelation.

This sediment of the tides, or sea, appears to be composed of various substances; and though every where similar, is yet various, in some respects, in different neighbourhoods. In some, the greater portion is of a fine sand, or *silex*; in others, *alumine* or clay. It is uniformly of a black appearance, from the decayed animal and vegetable matters which abound in it, namely *carbon*. It is frequently of a gunpowder appearance, and small; and indeed, has most of the ingredients of that composition, though in different proportions. It abounds in sulphur, and the sulphuric acid; especially the sandy kind of it; as the alumine or clayey kind abounds more in alum, or the sulphuric acid combined with clay. In the former kind, the more sandy, the sulphuric acid seems to be united with *soda*; thus forming the *sulphat of soda*, or Glauber's Salts; the sea salt having lost the muriatic. This soda is, by the acting of the atmosphere separable from the sulphuric acid, both of which when thus at liberty to combine with carbonic substances, are powerful stimulants in decomposition; the soda being an alkali, and therefore highly useful in the soil, and the sulphuric acid, being that which is principally operative in gypsum, or plaster of Paris. The alumine sulphate, is also useful in the same way; the alumine, uniting with the soil, in the form of clay; leaving the sulphuric acid disengaged, and therefore at liberty to unite with carbonaceous matter, in the formation of the carbonic acid, the main principle of vegetable growth. The sulphuric acid, which

abounds in this fossil substance, is a principal ingredient in all manures of the animal or vegetable kind, and is particularly observable in horse dung which has putrified.

Another constituent of this substance is also important as a manure; viz. the *carbon*, or charcoal, which gave it its black appearance. This combining with other substances, forms the carbonic acid as before, and this uniting with the water in the earth, serves to constitute the fibrous, or woody part of vegetables.

This fossil substance has, though in some instances, improperly, been denominated *marle*; and appears to be an immense storehouse of riches and fertility to the soil of West Jesey, and is incomparably of more value to the inhabitants if improved, than would be mines of the precious metals; as it would be the means of calling forth the cardinal virtues of *industry* and *labour*; without which no country can be populous or prosperous; and for the want of which, Spain with the mines of Peru, is become poor. It is particularly useful as a top dressing upon grass; but it is also successfully applied in the form of compost. It is deposited in the barn yard, over winter, or toward spring. The whole contents of the yard having been heaped up in the winter or spring, to ferment and pulverize, it is then applied to the corn ground, or otherwise. But, however it may be applied, it is necessary that it be pulverised by the agency of the frost; and in this state spread evenly over the soil, much in the manner of ashes It therefore should be dug in the winter, or autumn, and laid in small heaps on the ground, where it is to be applied. If spread too liberally it will destroy all vegetation, the same as other strong stimulants; as salt or lime.

This fossil manure, or marle, has for some time been considerably in use, in the vicinity of mount Holly, and in Evesham, Burlington county, where the effect of its application is said to be wonderful. It is also in use in Gloucester county, and probably in other parts of West Jersey. The writer was lately to see the result of an ex-

periment by Abraham Inskeep, Esq. of Cropwell, which was highly satisfactory. About the middle of April 1810 half an acre of low Indian grass meadow, entirely reduced, was covered at the rate of ten two horse loads per acre. In three months afterwards, there was mown off it a heavy swath of fine sweet grass, without any seeding, chiefly white and red clover. This season, to judge from present appearances, there will probably be cut an equally fine crop, whilst the soil around retains its former sterillity. Other instances of like success might be adduced.

This manure may be readily found in most of W. Jersey, by digging into the banks of the creeks and water courses: scarcely a mill is erected, but its foundation is laid in this substance. A stratum of red earth, or iron sand, is generally observable over the marsh whence probably, the *vitriolic oil*, or sulphat of iron, which is sometimes noticed in it, proceeds.

The stratum of marle is very compact, from which circumstance the rains, percolating through the earth, pass over it, forming springs on the surface of the ground, on the sides of the banks near the water courses. These springs are therefore a sure indication of the marle. This substance has uniformly a sulphurous smell, when exposed to warm atmosphere, in dry weather.—It also dissolves with, and effloresces after rain; that is, forms a crust or covering of fine white powder, on the surface. In some neighbourhoods it is sold at 25 cents per load, and taken to the distance of six miles.

It would be well, therefore, for the citizens of W. Jersey, and probably of other maritime tracts of the neighbouring states, to search for this substance, and make repeated and varied experiments on the use of it; that if it should in time, prove to be what it is now thought to be, and in part known to be, it may not remain forever as a "talent buried in the earth," but be suitably "occupied."

U. S. Gazette.

FROM THE BATH PAPERS.

ON MAKING BUTTER AND CHEESE.

[*By Mr. Hazard, of Stoney-Littleton.*]

GENTLEMEN,

As no butter is esteemed equal to that which is made in the county of Essex, and which is well known by the name of Epping butter, and which, in almost every season of the year, will yield at London from one shilling to fourteen-pence per pound averdupoise, I presume it will not be deemed improper to recommend farmers to adopt the method of making such butter; I shall also add what I have gathered from upwards of twenty years experience, part of which time I resided, and occupied a large farm, in the neighbourhood of Epping. I have been a resident in the county of Somerset. And in both counties we could in general obtain one half-penny or penny per pound more for our butter than the general market-price.

Before I proceed to point out the method of making the butter, it may not be improper to say something concerning the Dairy-House, which should always be kept in the neatest order, and so situated as that the windows or lattices never front the south, south-east, or south-west; lattices are also to be preferred to windows, as they admit a more free circulation of the air than *glazed* lights possibly can do. It has been objected, that they admit cold air in winter, and the sun in summer; but the remedy is easily obviated, by making a frame the size or somewhat larger than the lattice, and constructing it so as to slide backward and forward at pleasure; pack-thread strained across this frame, and oiled cap paper pasted thereon, will admit the light and keep out the sun and wind.

It is hardly possible in the summer to keep a dairy-house too cool; on which account none should be situated far from a good spring or current of water. They should be neatly paved either with red brick or smooth

hard stone, and laid with a proper descent, so that no water may lodge; this pavement should be well washed in the summer every day; and all the utensils belonging to the dairy should be kept perfectly clean; nor should we ever suffer the churns to be scalded in the dairy, as the steam that arises from hot water will injure the milk. Nor do I approve of cheese being kept therein, or rennet for making cheese, or having a cheese press fixed in a dairy, as the whey and curd will diffuse their acidity throughout the room.

The proper receptacles for milk are earthen pans, or wooden vats or trundles, but none of these should be lined with lead, as that mineral certainly contains a poisonous quality, and may in some degree affect the milk; but if people are so obstinate as to persist in using them, I advise that they never forget to scald them, scrub them well with salt and water, and to dry them thoroughly, before they deposit the milk therein. Indeed all the utensils should be cleaned in like manner before they are used; and if after this they in the least degree smell sour, they must undergo a second scrubbing before they are fit for use.

With respect to making of butter, it is right to observe, that the greater the quantity made from a few cows, the greater will be the farmer's profit; therefore he should never keep any but what are esteemed good milkers.—A bad cow will be equally expensive in her keep, and will not perhaps (by the butter and cheese that are made from her) bring in more than from three to six pounds a year; whereas a good one will bring from seven to ten pounds per annum: therefore, it is obvious that bad cows should be parted with, and good ones purchased in their room.

When such are obtained, a good servant should be employed to milk them; as by the neglect and mismanagement of servants, it frequently happens that the best cows are spoiled. I advise no farmer to trust entirely to servants, but sometimes to see themselves that their

cows are milked clean; for if any milk be suffered to remain in the udder, the cow will daily give less, till at length she will become dry before the proper time, and the next season she will scarce give milk sufficient to pay for her keep.

It sometimes happens that some of a cow's teats may be scratched or wounded so as to produce foul or corrupted milk; when this is the case, we should by no means mix it with the sweet milk, but give it to the pigs; and that which is conveyed to the dairy-house should remain in the pail till it is nearly cool, before it be strained; I mean if the weather be warm; but in frosty weather it should be immediately strained, and a small quantity of boiling water may be mixed with it, which will cause it to produce cream in abundance, and the more so, if the pans or vats have a large surface.

During the hot summer months, it is right to rise with or before the sun, that the cream may be skimm'd from the milk ere the dairy becomes warm; nor should the milk at that season stand longer in the vats, &c. than twenty four hours, nor be skimm'd in the evening till after sun set. In winter, milk may remain unskimm'd for thirty-six or forty-eight hours; the cream should be deposited in a deep pan, which should be kept during the summer in the coolest part of the dairy; or in a cool cellar where a free air is admitted, which is still better.—Where people have not an opportunity of churning every other day, they should shift the cream daily into clean pans, which will keep it cool, but they should never fail to churn at least twice in the week in hot weather; and this work should be done in a morning before the sun appears; taking care to fix the churn where there is a free draught of air. If a pump-churn be to be used, it may be plunged a foot deep into a tub of cold water, and should remain there during the whole time of churning, which will very much harden the butter. A strong rancid flavour will be given to butter, if we churn so near the fire as to heat the wood in the winter season.

After the butter is churned, it should be immediately washed in many different waters, till it is perfectly cleansed from the milk; but here I must remark, that a warm hand will soften it, and make it appear greasy, so that it will be impossible to obtain the best price for it. The cheesemongers use two pieces of wood for their butter; and if those who have a very hot hand were to have such, they might work the butter so as to make it more saleable.

The Epping butter is made up for market in long rolls, weighing a pound each; in the county of Somerset they dish it in half pounds for sale; but if they forget to rub salt round the inside of the dish, it will be difficult to work it so as to make it appear handsome.

Butter will require, and endure, more working in winter than in summer; but I must remark, that I never knew any person whose hand was warm by nature make good butter.

Those who use a pump-churn must endeavour to keep a regular stroke, nor should they admit any person to assist them, except they keep nearly the same stroke; for if they churn more slowly, the butter will in the winter *go back*, as it is called; and if the stroke be more quick and violent in the summer, it will cause a fermentation, by which means the butter will imbibe a very disagreeable flavour.

Where people keep many cows, a barrel-churn is to be preferred; but if this be not kept very clean, the bad effects will be discovered in the butter; nor must we forget to shift the situation of the churn when we use it, I mean as the seasons alter, so as to fix it in a warm place in winter, and where there is a free air in summer.

In many parts of this kingdom they colour their butter in winter, but this adds nothing to its goodness; and it rarely happens that the farmers in or near Epping use any colour; but when they do, it is very innocent. They procure some sound carrots, whose juice they express through a sieve, and mix with the cream when it enters

the churn, which makes it appear like May butter; nor do they at any time use much salt, though a little is absolutely necessary.

As they make in that country but very little cheese, so of course very little whey butter is made, nor do I wish any person to make it, except for present use, as it will not keep good more than two days; and the whey will turn to better account to fatten pigs with; nothing feeds them faster, nor will any thing make them so delicately white. But I must observe, that no good bacon can be made from pigs thus fatted; where much butter is made, good cheese for servants may be obtained from skimm'd milk, and the whey will afterwards do for store pigs.

The foregoing rules will suffice for making good butter in any county; but as some people are partial to the *West-Country* method, I shall describe it as briefly as possible.

In the first place they deposit their milk in earthen pans in their dairy house, and (after they have stood twelve hours in the summer, and double that space in the winter) they remove them to stoves made for that purpose, which stoves are filled with hot embers; on these they remain till bubbles rise, and the cream changes its colour; it is then deemed heated enough, and this they call scalded cream; it is afterwards removed steadily to the dairy, where it remains twelve hours more, and is then skimm'd from the milk, and put into a tub or churn; if it be put into a tub, it is beat well with the hand, and thus they obtain butter; but a cleanlier way is to make use of a churn. Some scald it over the fire, but then the smoke is apt to affect it; and in either case, if the pans touch the fire, they will crack or fly, and the milk and cream will be wasted.

The Cambridgeshire salt butter is held in the highest esteem, and is made nearly after the same method as the Epping; and by washing and working the salt from it, the cheesemongers in London often sell it at a high price for fresh butter. They deposit it when made into wooden tubs or firkins, which they expose to the air for two

or three weeks, washing them often; but a readier way is to season them with unslaked lime, or a large quantity of salt and water well boiled will do: with this they must be scrubbed several times, and afterwards thrown into cold water, where they should remain three or four days, or till they are wanted; then they should be scrubbed as before, and well rinsed with cold water; but before they receive the butter, care must be taken to rub every part of the inside of the firkin with salt; then if the butter be properly made, and perfectly sweet, it may be gently pressed into the firkin; but it must be well salted when it is made up, and the salt should be equally distributed through the whole mass, and a good handful of salt must be spread on the top of the firkin, after which the head should be immediately put on.

They pursue nearly the same method in Suffolk and Yorkshire; nor is the butter that is made in those counties much inferior to that made in Cambridgeshire; indeed it is often sold in London for Cambridge butter.—No people make more butter from their cows than the Yorkshire farmers do, which I am persuaded is owing to the care they take of their cows in the winter; at that season they house them all, feed them with good hay, and never suffer them to go out (except to water) but when the weather is very serene; and when their cows calve, they give them comfortable malt mashes for two or three days after; but these cows never answer if they are removed to other counties, except the same care and attendance be given them, and then none answer better.

Land whereon cows feed, very often affects the butter. If wild garlick, charlock, or May weed, be found in pasture grounds, cows should not feed therein till after they have been mown, when such pernicious plants will appear no more till the following spring; but those cows that give milk must not partake of the hay made therefrom, as that will also diffuse its bad qualities.

Great part of the Epping butter is made from cows that feed during the summer months in Epping forest, where the leaves and shrubby plants contribute greatly

to the flavour of the butter. The mountains of Wales, the highlands of Scotland, and the moors, commons, and heaths in England, produce excellent butter where it is properly managed; and though not equal in quantity, yet far superior in quality, to that which is produced from the richest meadows; and the land is often blamed when the butter is bad through mismanagement, sluttishness, or inattention.

Turnips and rape affect milk and butter, but brewer's grains are sweet and wholesome food, and will make cows give abundance of milk; yet the cream thereon will be thin, except good hay be given at the same time, after every meal of grain.

Coleworts and cabbages are also excellent food: and if these and savoys were cultivated for this purpose, the farmers in general would find their account in it.

Cows should never be suffered to drink improper water, stagnated pools, water wherein frogs, &c. spawn, common sewers, and ponds that receive the drainings of stables, are improper.

I write all these particulars from my own knowledge, and am well persuaded they may prove useful to those who are not so much bigotted to their own opinion.

CHEESE.

The methods of making cheese are so various, that it is not in the power of any person to be acquainted with them all; however, I have selected a few of the best, or those that are in the highest esteem.

The Double Glocester is a cheese that pleases almost every palate; the best of this kind is made from new, or (as it is called in that and the adjoining counties) *covered milk*; an inferior sort is made from what is called *half-covered milk*; though when any of these cheeses turn out to be good, people are deceived, and often purchase them for the best *covered milk cheese*; but farmers who are honest have them stamped with a piece of wood

made in the shape of a heart, so that any person may know them.

It will be every farmer's interest (if he has a sufficient number of cows) to make a large cheese from one meal's milk; this, when brought in warm, will be easily changed or turned with the rennet; but if the morning or nights milk be to be mixed with that which is fresh from the cow, it will be a longer time before it turns, nor will it change sometimes without being heated over the fire, by which it often gets dust, or soot; nor should I forget smoke, which is sure to give the cheese a very disagreeable flavour.

When the milk is turned, the whey should be carefully strained from the curd, which curd should be broken small with the hands; and when it is equally broken, it must be put by little at a time into the vat, carefully breaking it as it is put in, which vat should be filled an inch or more above the brim, that when the whey is pressed out it may not shrink below the brim; if it does, the cheese will be worth very little. But first, before the curd is put in, a cheese-cloth, or strainer, should be laid at the bottom of the vat, and this should be so large, that when the vat is filled with the curd, the ends of the cloth may turn again over the top of it; when this is done, it should be taken to the press, and there remain for the space of two hours, when it should be turned, and have a clean cloth put under it, and turned over as before; it must then be pressed again, and remain in the press six or eight hours, when it should again be turned, and rubbed on each side with salt, after which it must be pressed again for the space of twelve or fourteen hours more; when, if any of the edges project, they should be pared off; it may then be put on a dry board, where it should be regularly turned every day.

It is a good way to have three or four holes bored round the lower part of the vat that the whey may drain so perfectly from the cheese as that not the least particle of it may remain.

The prevailing opinion of the people of Gloucestershire and the neighbouring counties is, that the cheeses will spoil if they are not scraped and washed when they are found to be mouldy; but I know this to be erroneous, and that suffering the mould to remain, mellows them, provided they are turned every day; or if they will have the mould off, it should be removed with a clean dry flannel, as the washing them is only a means of making the mould (which is a species of fungus rooted in the coat) grow again immediately.

Some people scald the curd, but this is a bad and mercenary practice; it robs the cheese of its fatness, and can only be done with a view to raise a greater quantity of whey butter, or to bring the cheeses forward for sale, by making them appear older than they really are.

As most people like to purchase high coloured cheese, it may be right to mix a little *annatto* with the milk before it is turned; no cheese will look yellow without it; and though it does not in the least add to the goodness, it is perfectly innocent in its nature and effects.

It is not in the power of any person to make good cheese with bad rennet; therefore the following receipt should be attended to.

First; That the *vell, maw, rennet-bag,* (or by whatever other name it is called) be perfectly sweet, for if it be the least tainted, the cheese will never be good. When this is fit for use, three pints or two quarts of soft water (clean and sweet) should be mixed with salt, wherein should be put sweet-briar, rose leaves and flowers, cinnamon, mace, cloves, and, in short, almost every sort of spice and aromatic that can be procured, and if these are put into two quarts of water, they must boil gently till the liquor is reduced to three pints, and care should be taken that this liquor is not smoked; it should be strained clean from the spices, &c. and when found to be not warmer than milk from the cow, it should be poured upon the vell or maw; a lemon may then be sliced into it, when it may remain a day or two, after which it should be strained again and put in a bottle, where, if well corked,

ed, it will keep good for twelve months or more; it will smell like a perfume, and a small quantity of it will turn the milk, and give the cheese a pleasing flavour; after this, if the *vell* be salted and dried for a week or two near the fire, it will do for the purpose again almost as well as before.

Chedder cheese is held in high esteem; but I am well informed its goodness is chiefly owing to the land whereon the cows feed, as the method of making it is the same as is pursued throughout Somersetshire, and the adjoining counties; I mean not to exclude the north parts of Wiltshire, where the land has a surprising effect on both butter and cheese.

Cheshire cheese is much admired; and here I must observe that no people take less pains with the rennet than the Cheshire farmers; but their cheeses are so large as often to exceed one hundred pounds weight each; to this (and the age they are kept, the richness of the land, and their keeping such a number of cows, as to make such a cheese without adding a second meal's milk) their excellence may be attributed; indeed they salt the curd, (which may make a difference) and keep the cheeses in a damp place after they are made, and are very careful to turn them daily.

But of all the cheese this kingdom produces, none is more highly esteemed than the *Stilton*, which is called the Parmesan of England, and (except faulty) is never sold for less than one shilling or fourteen-pence per pound.

The *Stilton* cheeses are usually made in square vats, and weigh from six to twelve pounds each cheese. Immediately after they are made, it is right to put them into square boxes made exactly to fit them, they being so extremely rich, that except this precaution be taken they are apt to bulge out, and break asunder: they should be continually and daily turned in these boxes, and must be kept two years before they are properly mellowed for sale——Some make them in a net, somewhat like a cabbage net, so that they appear when made

not unlike an acorn; but these are never so good as the other, having a thicker coat, and wanting all that rich flavour and mellowness which make them so pleasing.

I must not omit to mention, that no people are more cleanly in their dairies than those of *Stilton* and its neighbourhood; and must also observe, that the making of these cheeses is not confined to themselves alone, as many others in Huntingdonshire (not forgetting Rutland and Northampton shires) make a similar sort, sell them for the same price, and give all of them the name of Stilton cheeses.

Though these farmers are remarked for cleanliness, they take very little pains with the *rennet*, as they in general only cut pieces from the *vell* or *maw*, which they put into the milk, and move gently about with the hand, by which means it breaks or turns it so, that they easily obtain the curd; but I am well assured, that if the method above described for making rennet were put in practice, they would make their cheese still better; at least they would not have so many faulty and unsound cheeses; for notwithstanding their cheeses bear such a name and price, they often find them so bad as not to be saleable; and I attribute this to their being so careless about the rennet.

I am persuaded as good cheese might be made in other counties, if people would adhere to the *Stilton* plan, which is this—They make a cheese every morning, and to this meal of new milk they add the cream taken from that which is milked the night before; this, and the age of their cheeses, I am almost confident, are the only reasons why they are preferred to others; for, from the nicest observation, I could never perceive that their land was in any respect superior to that of other counties.

Excellent cream cheeses are made in Lincolnshire, by adding the cream of one meal's milk to milk which comes immediately from the cow; these are pressed gently two or three times, turned for a few days, and

are then disposed of at the rate of one shilling per pound, to be eaten while new with radishes, sallad, &c.

Many people give skimm'd milk to pigs, but the whey will do equally as well after cheeses are made from this milk; such cheeses will always sell for at least two-pence per pound, which will amount to a large sum annually where they make much butter. The peasants and many of the farmers, in the north of England, never eat any better cheese; and though they appear harder, experience hath proved them to be much easier of digestion than any new milk cheeses. A good market may always be found for the sale of them at Bristol.

As I have taken much pains, from actual practice, to find out the defects of others in making butter and cheese; so through my advice several have attained a perfection in this art; and I shall think myself unworthy your patronage, if all do not excel who will strictly adhere to the methods laid down in the foregoing pages.

I am, your obedient servant,

Stoney-Littleton, Somerset, JOS. HAZARD.

Oct. 7, 1805.

From the American Daily Advertiser.

PHILADELPHIA SOCIETY FOR PROMOTING AGRICULTURE.

November 12, 1811.

ORDERED,

That the following Communication be published in such News Papers as are best calculated to forward its circulation; and it is hoped the Editors of such papers will assist the Society in their views; as well for the purpose of giving, as inviting information, on a subject peculiarly interesting at this time; when efforts, highly laudible and useful, are making, to increase and ameliorate our flocks of SHEEP, as well as other domestic animals, throughout our country.

Extract from the minutes,

JAMES MEASE, *Sec'ry.*

Belmont, October 7, 1811.

DEAR SIR,

My friend Dr. Rush, having been so obliging as to communicate to me a letter (to him) from Dr. *David Petrikin*, of *Danville*, in *Northumberland* County, Pennsylvania, containing some information apparently important, on a subject which, in the country, is most lamentably neglected—to wit—the diseases of domestic Animals;—I extract a part of that letter (dated 1st September 1811) for the information of the Society. Any thing relative to veterinary subjects is desirable, in our present dearth of information; but this seems peculiarly worthy of attention; though I have before observed very strong facts proving the similarity of diseases in Horses, Cattle, and other animals, with those afflicting the human species; originating in like, or the same causes; and requiring similar treatment. Whether the symptoms or exact description of the maladies existing at the same time, and in the same place, both in men and the brute creation, are alike, I will not determine. But I have repeatedly observed diseases appearing to me to originate in the same causes, existing at the same time in the same place, in our domestic animals and the human species.—No doubt this has been observed by others more competent to turn the circumstance to useful account. And it is very desirable that those qualified in such subjects should promulgate both facts and opinions. Dr. Petrikin has set a laudable example to professional characters; who cannot employ their anatomical and medical talents to more advantage, than by exerting them in inquiries of this nature. Some of the most respectable men of their profession in Europe, have deemed the subject honorable to them; and have devoted their aquirements in the medical art, as well as all branches of knowledge connected with it, to the great benefit of their country; by developing the causes and cures of diseases in domestic

animals; whereof a most valuable part of the property of all countries consists.

Your very obedient servant,

RICHARD PETERS.

DR. J. MEASE, *Secretary of the Philadelphia Society for promoting Agriculture.*

EXTRACT.

"The Hooping Cough has been the prevalent disease in this neighborhood, since the first of June. It has been very mild, and required medical aid only in a few cases—and in those a free use of the lancet was all that was necessary. There have been a few cases of *Typhus*, within two or three weeks past, on the high hills, about five miles from this place. Blisters, bark, wine, &c. were successful. The persons attacked were under twenty years of age. An inflammatory disorder has appeared among the *horses* in the neighborhood of these cases; which is generally mortal, principally from their being generally wrong treated. On the first appearance of the Hooping Cough amongst the human species, an inflammatory sore throat was epidemic among the Horses throughout this country; attended with loss of appetite, fever, inflammation of the Tonsils, and suppuration and very severe cough. I found that bleeding and purging was the remedy indicated in the beginning of the disease, or at any time before the suppuration of the humors. But after suppuration, peruvian bark, steel, asafetida and tar, were useful, and bleeding, &c. injurious. This disease has been generally called the throat distemper.

"I never was more forcibly struck with the similarity of the diseases of the human and brute creation, than last winter; of which the following is a history from my Note Book."

"January 12th, visited six patients. Disease Pneumonia—Pulse tense and quick:—Remedies; bleeding—cathartics, and blisters to the breast:—Called in a vi-

sit to Mr. W. B. Montgomery. Several of his *Sheep* have died of disease. Upon dissection, I find considerable inflammation of the membrane lining the Thorax: an effusion of water around the lungs; in one of them the lungs do not appear to be inflamed In several others the lungs are inflamed; and upon cutting into the substance of the lungs, the Cells appear full of a frothy liquid. The rest of the body appears healthy; as also the Brain. Examined several alive: *Symptoms;* Cough, the falling of both Ears backwards, Vertigo; so that in attempting to walk, they stagger. Prescribed bleeding and purges of molasses and yeast. January 16th, called to see Mr. Montgomery's *Sheep.* Several had recovered, that had been bled and purged the first day of the disease.

"The similarity of the diseases is evident, and Mr. Montgomery asserts, that bleeding alone saved one or two valuable half blooded Merino Sheep in this disease. The blood was taken by opening a vein near the articulation of the lower jaw. Mr. M. had at the time about three hundred sheep; of which he lost about thirty of this inflammatory *Disease, and chiefly* the fattest of the flock."

I copy no more of the letter; because it concludes with an apology to Dr. Rush, for the trouble given to him by the writer. The society have had the most satisfactory proof, in the excellent lecture delivered by Dr. Rush, and printed in our first volume, that he requires no apology; but takes an interest in all such communications of information;—I mention, with not the most distant idea of reproach, but with serious and sincere regret, that, until this communication, we have had no instance of the good effect produced on medical men, by the important example set in that lecture. So that our domestic animals are either, from necessity, placed in the hands of ignorant and fraudulent quacks, and low pretenders to veterinary knowledge; or abandoned to their fate: The latter is, in most cases, the safest alternative.

R. PETERS.

AMERICAN SUPERFINE CLOTHS.

The conclusion of the year 1811, presents us with an opportunity of noticing the great advancement and improvements made in this highly important branch of our manufactures; improvements which a few years since it would have been deemed impossible to have made in half a century.

There is now exposed for sale, at the domestic society's warehouse, superfine cloths, from the woollen manufactory recently established at Middletown in Connecticut, made of the first imported Spanish wool, and which will bear comparison with the best of imported; the wool is superior to most of the foreign superfines, and the colors warranted to be in every respect equal—Mr. William Patridge, a first rate dyer from the west of England, and who has resided in this city for some years, has the management of the dying department. These cloths are the first which the Middletown company have introduced into this city, and we doubt not but every encouragement will be given to the sale of them, in a decided preference by all who are friendly disposed to the progress of improvement in our country. It gives us much pleasure, whilst noticing this subject, to make mention of Oliver Evans' steam engines; all the various machinery of the above establishment is carried by one of them made here about 12 months since, and which has given great satisfaction to the proprietors. In every respect they consider it altogether superior to the English engines (and the best power for a woollen manufactory) —not only in the manner of using the steam and the great saving of fuel resulting therefrom (which is Mr. Evans' great improvement) but in the construction and simplicity of all parts of the machinery. By means of one steam valve revolving in one direction in a rotatory manner, he at once does away the necessity of all the complicated and expensive valves used to Watt and Bolton's engines for introducing and discharging the steam from the main cylinder. Besides the advantages result-

ing to the establishment from the use of this engine in warming the rooms free of expence from the waste steam that has done its work, the same steam is also applied in connection with the brushing machine in finishing their cloth, without adopting the method of oiling and hot pressing as is commonly practised in England. In this method of finishing, the cloth does not require sponging before it is made up. *Aurora.*

STATE OF NEW-YORK.

The following abstract of the population, resources, &c. of the state of N. York is extracted from a *Brief Topographical and Statistical Manuel of the State of New-York*, which comprises within thirty-six pages a great mass of information, very interesting to those whom business or speculation requires to attend to its interior concerns. If we had a similar manuel of each state in the union, it would add much to our stock of geographical and topographical knowledge of our own country; in which at present we are generally very deficient.

Nat. In.

"In 1731 this state contained ten counties and only 50,291 souls—in 1771, same counties and 163,338 souls—in 1786 (25 years ago) twelve counties and 238,896 souls—in 1791, sixteen counties and 340,120 souls—and in 1800, thirty counties, 305 towns (including three cities) and 586,000 inhabitants. Now(1811) the state contains about three hundred villages of from fifteen or twenty, but generally from thirty or forty, to six hundred houses; four hundred and fifty-two towns (including four cities;) forty-five counties; and (in 1810) 960,000 inhabitants; giving an increase of fifteen counties, one hundred and forty-seven towns, and 374,000 people in the last ten years!! And the militia of the state regularly enrolled amounted to 102,068 in 1809.

In *Manufactures* the late census has furnished data, for the following statement:

Looms 33,068; yards cloth (all kinds) 9,099,703—value $5,002,891. 82. Tan works 867; value of leather $1,299,542. 16. Distilleries 591; value $1,685,794. 40. Breweries 42; value $340,765. 68. Fulling Mills 427; *enhanced* value of cloth $679,126. 87. Paper Mills 28; val. $233,268. 00. Hat factories 124; val. $249,035. Glass works 6; val. (besides bottles, &c.) $716,800. Powder mills 2; value $10,400. 00. Rope walks 18; value $538,000. 00. Sugar houses 10; value $420,706. Oil Mills 28; value $46,283. 75. Blast furnaces 11; value $205,300. 00. Air do. 10; value $156,720. 00. Cut nail factories 44; value $276,932. 80. Forges 48; value $185,240. 00. Trip hammers 49; value (return of work from two of them only) $1,600. 00. Rolling and slitting mills 1; value $33,120. *Total value*—$12,085,525. 62. Also, 413 Carding machines—value included in cloth above; and 26 cotton factories, not included above, the cloth there mentioned being the manufacture of families only. The above returns (except for Ontario, Columbia, and Washington Counties) are moreover believed to be short of the real amount—no tow cloth was returned, except for two counties—instead of one there are ten or twelve rolling and slitting mills in the state—the nail, hat, paper and rope factories, furnaces, &c. much exceed the number returned. All the Woolen factories were omitted. The single county of Rensselaer will this year manufacture of the above articles the value of $600,000, though returned last year at $458,000. And many new factories, in Oneida especially, and in the Western country generally, are just going into operation. So that it may be safely affirmed that our present *annual* value of the above named manufactures exceeds $16,000,000!

There are now made annually 525,000 bushels of salt; viz. in Onondaga 453,840 (though in 1800 only 42,754); Cayuga 54,000; Genesee 1,400; Seneca (at least) 25,000; and Ontario about 8,760; total val. at the works $147,000. In Cayuga 2,240 skeins of silk. To all which may be added $60,000; the value of articles *annually* made by convicts in the State Prison.

I have not sufficient data to calculate the quantity of the ashes, maple sugar, flour &c. made, or the grain, cattle, sheep, beef, pork, &c. raised annually, so as to make a valuation of our products or lands. But as the sheep returned for Dutchess were 83,855—Albany 34,342—Cayuga 49,872—Onondaga 44,893—and Jefferson, 20,000—we may conclude, judging from the population, (exclusive of New-York Co.) that the whole state contains 1,280,000. Dutchess contains 14,341 horses and 51,650 neat cattle, which in like manner (N. Y. omitted) gives 247,000 of the former, and 886,000 of the latter; but probably 300,000 horses and 1,000,000 neat cattle would be nearer the true amount in the whole state.

The provisions made for *roads and bridges*, besides the numerous roads and bridges authorized to be laid out, made and built, at the risk of individuals or expence of the counties, the state, or the lands benefited thereby—are thirty six bridge companies with $509,000 stock, and one hundred and thirty-five turnpike companies with $7,558,000 stock, extending their roads over a length of four thousand five hundred miles, about one-third of which is completed.

The capital stock of the several incorporated banks is $11,690,000. The fund set apart by the state for the benefit of Common Schools now amounts to $483,326. 29—the last year's revenue of which was $36,427. 64—besides which 314.770 acres of unsold land still belong to this fund.

The *Revenue and Expenditures* of the state are, in the abstract, as follows:—Lands, about 1,000,000 acres, unsold; and state funds $4,191,803. 25 (in 1800 about $2,900,000. 00) the annual revenue of which is now $278,489. 96—besides which the receipts at the treasury from various other sources were, for the year 1810, $626,042. 88 (for 1791 $127,648; for 1800 $192,028. 71)—and during same time were paid out $606,328. 22 (in 1791 $143,417. 64; and in 1800 $261,765. 03.) Estimated expences for 1811, $268,366. 22. Debts which the state owes, besides some small unliquidated demands,

$880,000 (in 1800, $346,234. 98.) Which (exclusive of the School fund and land, and of the 1,000,000 acres public lands above named) gives about 30,000 annual excess of revenue over expenditures, and a permanent fund exceeding the public debt $3,311,803. 25

There are established in the State two colleges and upwards of forty academies; also, three hundred and sixty-four post offices, being more than one seventh of the whole (2,440) in the United States, and sixty different newspapers, and (in all) about ninety printing establishments. The shipping owned in this state, in 1809, was 251,525 tons, (besides that on the three lakes,) being one fifth of the whole owned in the United States. Amount of exports in 1807, $26,357,963; and revenue on imports, &c. more than one fourth of the whole paid in the United States (from one fourth to one third of which two last items is however derived from the trade of other states.)

In addition to the goodness of our soil and excellence of our timber, we have plenty of iron ore, slate, plaister of Paris, and inexhaustible salt springs, the most valuable in the world. There have also been found coal, copper, lead, sulphur, zinc, marble, isinglass, and some silver. Our territory (containing 55,000 square miles, of which four or five thousand are water,) stretches from the Atlantic the whole length of New-England, and spreads along the St. Lawrence, and three great navigable Lakes. Embracing the head-waters of the Ohio, and two other large rivers which pass southerly through other States—the whole course of the best river in the United States and perhaps in the world, together with twenty other rivers navigable by boats and rafts, this State affords the best passage in the United States both by land and by water, from tide-waters to the extensive navigable Lakes of the west. There is not a mountain or any great unavoidable hill to pass between Albany and Lake Erie. It is the only state, too, (except at the narrow and N. E. extremity) which extends across the *whole width* of the United States territory; and the only spot on which the At-

lantic and the Lake *can* be united by sloop navigation — This peculiar situation, with its other advantages, renders this State highly interesting to the politician, the man of business or enterprise, the emigrant, and the traveller.— With the latter especially, the ready and safe conveyance up the Hudson and to Lower Canada, and the good roads and accommodations westward, will be additional inducements to visit a country of this description, which moreover furnishes Mineral Waters more efficacious and valuable than the best medicinal Springs of Europe, and which (besides many intermediate sublime natural views and objects) contains on its western confines the greatest natural curiosity in the world, a country interspersed (exclusive of the great waters before named) with more than *fifteen lakes*, from ten to forty miles in length, and numerous smaller ones, exhibiting as great an extent, variety, and beauty of inland water scenery as all the other States together.

COLUMBIAN AGRICULTURAL SOCIETY.

At a meeting of the Standing Committee of the Columbian Agricultural Society, (held by adjournment from the 23d of November,) at Georgetown, on Wednesday the 11th of December, 1811, it was determined that the following Premiums in Plate with suitable devices, be given, underthe usual regulations and restrictions* at the general meeting of the society, to be held on the third Wednesday of May next, viz.

Premium 1.—To the value of SIXTY DOLLARS, for the best two-toothed Ramb Lamb, of the fine wooled breed.

2. To the value of SIXTY DOLLARS, for the best two-toothed Ramb Lamb of the long wooled breed.

3. To the value of FORTY DOLLARS, for the second best two-toothed Ramb Lamb, of the fine wooled breed.

4. To the valne of FORTY DOLLARS, for the second best two-toothed Ramb Lamb, of the long wooled breed.

*See Volume 1. Page 204.

5. To the value of THIRTY DOLLARS, for the best piece of Cotton Cloth, proper for women's dresses—not less than ten yards.

6. To the value of THIRTY DOLLARS, for the best piece of Fancy Patterns for Vests—not less than ten yards.

7. To the value of THIRTY DOLLARS, for the best piece of Cotton Cloth, suitable for pantaloons or Small Clothes—not less than ten yards.

8. To the value of TEN DOLLARS, for the best pair of knit or woven Stockings, of cotton or thread, full size.

9. To the value of THIRTY DOLLARS, for the best piece of Hempen or Flaxen Sheeting—not less than ten yards.

10. To the value of THIRTY DOLLARS, for the best piece of Hempen or Flaxen Shirting—not less than ten yards.

11. To the value of THIRTY DOLLARS, for the best piece of Hempen or Flaxen table Linen—not less than ten yards.

12 To the value of TWENTY DOLLARS, for the best piece of twilled Bagging, of Hemp, Flax or Cotton—not less than ten yards.

13. To the value of TWENTY DOLLARS, for the best piece of bed ticking, of Flax or cotton, or in part of all or either—not less than ten yards.

14. To the value of TWENTY DOLLARS, for the best Plough, to break up heavy land, to go with three horses and turn completely a wide and deep furrow, uniting in its construction, strength, durability and simplicity, with a steady and easy draught.

15. To the value of TEN DOLLARS, for the best Plough to break up lighter land and go with two horses, constructed with a view to the requisites above stated.

16. To the value of TEN DOLLARS, for the best Plough to cultivate only the surface of mellow land, to keep down the growth of weeds and grass, without throwing up the earth, to go with one horse.

17. To the value of TEN DOLLARS, for shearing a sheep in the neatest, safest and most expeditious manner.

18. To the value of FIVE DOLLARS, for shearing a sheep, second best as above.

By order of the standing committee.

DAVID WILEY, Sec'ry.

FROM THE BATH PAPERS.

Method of making Ponds in dry Countries, for Watering Sheep and Cattle.

GENTLEMEN,

Mark out a circular piece of ground, whose diameter is twenty yards, (more or less) and dig out one foot of earth, so as to leave the sides perpendicular that depth.—Then begin to form it in the shape of a wooden milk-bowl, till the perpendicular dept in the centre be four feet and a half or five feet. On the bottom and sides spread lime, finely powdered, two or three inches thick, On this lime lay well tempered clay, six or seven inches thick. This clay, when laid on, must be well worked with circular beaters of a foot diameter and three inches thick, first using the outside edge of the beater, which will indent the clay, then use the flat side, so as to leave it with a smooth surface. Upon the clay thus prepared, lay gravel or chalk-stone six inches thick. The gravel should have both the finer and coarser parts screened from it. No more clay should be prepared for the gravel than can be laid and covered the same day, as heat or frost will be equally apt to catch it, which must be particularly guarded against, as it would occasion the pond to lose its water. After the gravel is laid in, nothing more is necessary.

A piece of ground should be chosen for this purpose, to which there is a descent from all sides, if it can be found in a proper situation.

Winter, or early in the spring, is the best season for making these ponds or reservoirs.

Lay each material of equal thickness from the centre to the edges of the pond.

If lime can be made fine enough without the use of water, so much the better: if not, use as little water as possible. The clay should have no more water than will serve to make it work kindly.

In this manner ponds may be made of any size, the diameter and depth being kept nearly in the same proportion as above directed.

After I left Bath the last summer, and before the end of the long drought, I saw in a field one of these ponds nearly two-thirds full of water, although many cattle, sheep, and horses, had grazed there since the begining of May. I am, &c.

January 27, 1779.

PEACH TREES.

The attack of a worm on the Peach Tree, appears to be general from Georgia to Main, and very few Trees have escaped this destructive grub. All seem to agree, that the insect which produces the worm, deposits its eggs on the tree, at or near the root. Various have been the methods taken to prevent the attack of the worm, which is generally made just above the ground:— Some have bound straw, tow, and other articles about the tree, and some have placed boxes around their trees, ten or twelve inches deep, filled with sand, during the time the insect deposits its eggs. These are removed as soon as the frost sets in; so that the worm when hatched cannot reach the ground before it is destroyed by the frost. These remedies have been successful in most cases; but the care, trouble and expense attending them, render them unfit for large orchards or plantations. I would inform the public, that the worms may be extirpated or rendered inoffensive, by inoculating on the wild cherry or persimmon tree, stocks, instead of the peach. The stocks should be left eighteen or twenty inches long: the peach will grow on them. The experiment was made last year. The stocks are proof against the peach worm, and are in great plenty. As the worm cannot live above ground, I think the remedy will be complete.

T. C.